Neuroscience and the Evolving Brain

Studying Brain Development in Children to Understand Mental Illness

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Lisa Feldman Barrett, Ph.D.
Reptilian
(“Lizard Brain”)
Instincts

Mammalian
(“Limbic System”)
Emotions

Cerebral Cortex
(“Rational Brain”)
Cognition
Under-developed cognitive system
Hyperactive emotion system
Cerebral Cortex
(“Rational Brain”)
Cognition

Reptilian
(“Lizard Brain”)
Instincts

Mammalian
(“Limbic System”) Emotions
Evolution ➔ Development and Function
Your brain predicts your body’s needs in advance.
Brain Barrett (2020). Seven and a Half Lessons About the Brain
Deposits
Withdrawals
Savings
Body Budgeting at the Core of the Brain

Kleckner, Zhang, Touroutoglou, Simmons, Quigley, Dickerson & Barrett (2017) *Nature Human Behavior*

- p < .00001
- N discovery = 280
- N replication = 280
A Multifunctional Brain System

Barrett & Satpute (2013). Current Opinion in Neurobiology
Mood is a barometer for your body budget

Shaffer et al. (2022). Annual Review of Clinical Psychology
MOOD

Activated

Unpleasant

Fatigued

Pleasant

Barrett & Bliss-Moreau (2009); Russell (1980); Russell & Barrett (1999)
DEPRESSION
Annual Review of Clinical Psychology

Allostasis, Action, and Affect in Depression: Insights from the Theory of Constructed Emotion

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Your body is at the core of your mind.
Muscles
Immune System
Hormones
Digestion
Neurons
Lungs
Heart
Waste Removal
Sex Hormones (metabolic regulators)

Expanding Social World

Disrupted Sleep

Educational Pressures

Uncertain Future
AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health

From the same period in 2019

* After an initial drop
CDC.GOV

Key Points

Question  What is the global prevalence of clinically elevated child and adolescent anxiety and depression symptoms during COVID-19?

Findings  In this meta-analysis of 29 studies including 80,879 youth globally, the pooled prevalence estimates of clinically elevated child and adolescent depression and anxiety were 25.2% and 20.5%, respectively. The prevalence of depression and anxiety symptoms during COVID-19 have doubled, compared with prepandemic estimates, and moderator analyses revealed that prevalence rates were higher when collected later in the pandemic, in older adolescents, and in girls.
Metabolic mindset